

Hutatma Jaywantrao Patil Mahavidyalaya, Himayatnagar.

Department of Environmental Science

Program Outcomes

Objectives of this program:

- Enable to understand key concepts in the life and physical sciences and will apply the scientific process, as well as appreciate both the potential and limitations of the process.
- To make able to utilize knowledge of the sciences within an interdisciplinary context in solving environmental issues such as environmental health, food and agriculture, energy, waste and pollution, climate change, population, resource management, and loss of biodiversity.
- To aware about the environmental problems, and the proposed solutions.
- Inspire the students for pursuing higher studies in Environmental Science and also enable students to get employed in the 1 research Institutes Industries, Educational Institutes and in the various consultancies run by NGO's

Specific Objectives:

- 1) Students will assess necessary scientific concepts and data, consider likely social dynamics, and establish integral cultural contexts.
- 2) Students will able to solve problems systematically, creatively, and reflexively, ready to assemble knowledge and formulate strategy.
- 3) Students will have mastered foundational knowledge enabling them to make sound life decisions as well as enter a career in an environmental professions.
- 4) Students will continue to evolve an individual vision of harmonious and sustainable interaction among humans as well as between humans and the rest of the natural world.

Course Outcomes

B.Sc. First Year

Paper- I: CCENV-I Section A: Earth and Earth Surface Processes

Preamble: The content of the paper will acquaint students about the basic structure and composition of the Earth and will explore various surface processes.

01. Understand about the tectonic plates, sea floor spreading and mountain formation.
02. Have the Knowledge of composition of atmosphere and Atmospheric processes.
03. Get the idea of soil properties and composition.
04. Able to know the interactions of earth processes.

Paper II: CCENV-I Section B: CCENV-I Section B : Basic Science and Environment

This paper aims to build conceptual understanding of students by exposing them to the basic principles behind various environmental processes. The paper has been divided into two sections, with the view to introduce students to the fundamental concepts of physics and chemistry of environment.

01. Understand the basics of Environmental Physics.
02. Grasp knowledge about the Basics of Environmental Chemistry.
03. Able to know about the interrelations of atmosphere and meteorological parameters.
04. To acquire the skill of the measurement of meteorological variables.

Paper – III CCENV-II Section A: Developments in Environment

The contents of this paper will cover the conceptual understanding of students by exposing them to the natural processes and developments in environment. The paper has been divided into three sections, with the view to introduce students to the concepts of universe, earth and atmospheric movements.

01. Understand key concepts of Evolution of universe and Biogeochemical cycles.
02. Acquire the knowledge about Minerals and Rocks.
03. Get the details knowledge of different chemical reactions occurring in atmosphere.

Paper –IV CCENV-II Section-B: Issues in Environment

Environmental decisions. The students will be enabled to think critically on environmental issues. The course examines the relationship between the environment and social issues enabling the students to understand and appreciate the role played by environmental conflicts, society and their interface in shaping environmental decisions. The students will be enabled to think critically on Environmental Issues.

01. Aware about the global Environmental issues.
02. Understand developmental activities and Environmental problems.
03. Able to know impact of urbanization on Environment.
04. Have the knowledge of human intervention in the Environment.

B.Sc. Second Year

Paper VI- CCENV-III Basic concepts in Environmental Microbiology

Aim of this paper to know about the microbes, their life and their relationship with environment. Students will come to know about Diversity and Scope of Microbes and its Importance, Microscopy and Staining, Classifications and different environmental factors.

Paper VII- CCENV-III (Section-B) Air Pollution & Meteorology

The course examines the Atmosphere & Meteorology, Structure of Atmosphere, Economic effects of Air Pollution. Students will understand Atmosphere & Meteorology, Types of Air Pollutants and Their Sources, Mechanism of action of air pollutants, Effects of Air pollution on Plants.

Paper – VIII CCENV IV (Section A) Applied Environmental Microbiology

Acquaint the students about the Methods in Microbiology, Concept of Sterilization and sources of microbes and its applications in various Environmental processes. Students will understand the microbes, its applications and will be able to develop the Microbial techniques to use in various environmental processes.

Paper-IX CCENV IV (Section B) Air and Noise Pollution Control

The course content examines the Ambient Air Pollutants, Noise Pollution and various Control techniques. Students will come to know about Ambient Air Pollutants Sampling, Analysis and Measurement: Noise Pollution: Sources of Noise, Effects of Noise Pollution and control measure.

B.Sc. Third Year

Paper XII DECENV I (Section A) Water pollution and Waste water Analysis

To understand scientific reasons of point and non-point source of water pollutants which enable to give correct suggestions for its proper treatment. Students will come to know that,

01. Various sources of water and waste water.
02. Its quality through physico – chemical and biological characters.

Paper XIV DECENV [(Section – B) Elective – II]:

Environmental education and biodiversity. Environmental education for better understanding and upliftment of biodiversity and natural resources. The outcome of this paper is to understand the goals and objectives of Environmental Education., to understand the importance of Biodiversity and natural resources.

Paper - XVI DECENV II (Section A) Waste Water Engineering

To give the proper treatment on the basis of load of waste water. Students will understand.

01. The scientific process of treatment of waste water.
02. To know the load of waste water for appropriate primary / Secondary/ tertiary treatment.

Paper – XVIII DECENV II [(Section B) Elective II]: Environmental Management

To understand various movements of environmental protection management through software tools and environmental laws. Students will understand the principles of environmental management and various historical movements in environmental protection. And various laws and legislations of environmental protection.

SKILL ENHANCEMENT COURCES for B.Sc. II and B.Sc. III YEAR

Skill Enhancement Course: CCENV-I (A) Soil Testing Analyst

The main objective of the course is to provide the student with a formalized way to build their fundamental knowledge and skills within the different areas of soil science to enhance their professional skills testing or similar topics that provide information about soil. Soil testing analyst works like laboratory technician, who is responsible for collecting and analyzing soil samples to determine whether the soil is suitable for agricultural practices, gardening or plantation or natural uses.

CCENV II (Section B) Composting from Solid Waste

The main objective of course is to improve the awareness and skills of the students with modern techniques of collections, transportations and analysis of solid waste materials for production of organic manure and research activities. Soil testing analyst will able to Use of instruments and their general maintenance, interpretation of analytical data and formulation of reports/recommendations.

DECENV III Paper – XV Soil conservation

The main objective of this course is to imbibe the importance of soil and its development. Student will acquire the soil management skill, will know how to check the nutrient contents, deficiencies and its impact on food.

DECENVP- IV Paper – XXII Training course on waste water Analysis

The main objective of the course is to make students aware and expert in handling waste water its analysis and use of various techniques and instruments. This course is designed to train students to safely and effectively operate advanced wastewater treatment plants in future